SUBJECT INDEX

Ability
  quantitative-relational 19–43
  self-assessment 11
Achievement motivation 147
Action control 6
Action-habitat 219
Activity systems 195
Affective learning process, heuristic model 8, 9
Algebraic reasoning 19, 25, 29
Appraisals 1, 8
Apprenticeship learning 141
Aptitude Treatment Interaction 306, 313
Area measurement, mediation 230, 233
Argumentation 337–350
Arithmetic operations, ability, development 19, 23, 28
Ascending from the abstract to the concrete 249

Blind copying 73
Blind–deaf children 182, 201–215

Causal attribution theory, motivation 148
Cavalieri method 230, 233, 275
Classroom grouping, talk 103–118
Classroom restructuring, knowledge-building communities 140
Coaching, metacognitive instruction at university 319, 322, 324, 333
Code knowledge, word-search strategies 73, 80, 84
Cognitive development, conflict and social marking 119–127
Cognitive psychology 130
Collaborative learning 111, 140, 321
Communication, blind–deaf children 209
Community of practice 252
Competence 1
  current selves and subjective competence 7
  self-concept and self-esteem 3
  self-efficacy 4
  perception of control 5
Computerized discovery environment, REFRACT 45, 48, 53
Computer programming, metacognitive instruction 322
Computer simulations of strategy choice 95
Concept formation 46
Conceptual model 306
Conflict and social marking 119–127
Constructive activity 132
Control 5
Conversation
  classroom groups 108
  conflict and social marking 120, 122
Co-operative activities, university students 321, 333
Co-operative classroom grouping, talk 103–118
Criticism 254
Cultural psychology 181, 188
  development 190
Cultural tools 263
Culture 179
  expansive learning 255
  geometry education 217
  measurement of 278
  psychology of learning 283
  research on learning 273
  theory of development 187
Current selves 7

Davydov, V. V. 249
Deck of cards model 230, 240
Development
  cultural theory 187–200
  mathematical ability 20, 22, 32, 39
Developmental psychology 190, 194
5th Dimension 197
Discovery environment REFRACT 48, 53
Discovery learning 305, 313
Discrimination level analysis 26

Encapsulation of school learning 243
Enthymemes 338
Expansive learning 254
Expert–novice, problem situations 137, 290, 303
Explanation, construction of 139

Finding out 244
Formal instruction, ratio concepts 167, 173
Framer 233, 241
Freudenthal, H. 223
Future selves 14

Gender, mathematical ability 37
Geometry 182, 183
  culture, Navajo Indians 217, 222
  mediation, area 229

Goal sketch 99
Group interaction 104, 134, 141
Guided learning 322

Humanities, motivation in 151, 152
Hypothesis-driven learning 45

Imagery 291
Individual differences
  mathematical ability 27, 36, 40
  strategy choice and discovery 89, 94
  written language acquisition strategies 67–87
Inductive thinking 46
Innovation 135
Instructional aid 305
Instructional psychology 130
Instructional simulation program, REFRACT 45, 48
Intellect, development 20
Intellectual ability
  problem situations 289–302
  working method 303–317
Intrinsic motivation 147

Japan, mediation and geometry 229
Joint activity, child-carer 209

Kindergartens 191
Knowledge
  construction 131
  culture 218
  problem situations, good and poor students 289–302, 303
  representation and organisation 132

Language, blind–deaf children 205, 209
Lave, J. 252
Learned helplessness 6
Learning
  as constructive activity 132
  by expanding 254
  culture 179, 273, 283
  from examples 137
  hypothesis testing 45
  intellectual ability and working method 304
Legitimate peripheral participation 252
Letter knowledge 69, 83
Level III learning 254
Liberia 192, 194
Localization strategies, word-search 73, 84
Locus of control 5

Mathematics
  apprenticeship learning 142
  cultural knowledge 217, 222
  mediation and geometry 229
  street 276
  structure and development of abilities 19–43
Mediation and learning 229, 261, 265
Meshcheryakov, A. 201–215
Metacognitive instruction, university students 319–336
Mindful learning 332
Min strategy 91, 97
Modelling, metacognitive instruction at university 319, 322, 324, 333
Moon phases 244
Motivation in secondary education 145–159
Multiplicative strategies 167

Navajo culture 182, 217, 279
  education 221
  geometry 222
  space 220
  thought 218
Novice learning, intellectual ability and working method 303–317
Novice students, knowledge of problem situations 291

Operational thinking, conflict and social marking 119–127
Orienting-investigatory activity 208

Paper-cut models 231, 234
Phonological awareness 277
Physics, knowledge of problem situations 289–302
Preschool 192
Primary humanization 209
Problem solving
  good and poor novice students 289–302
  intellectual ability and working method 311
  learning from example 137
  models 296
  novice–expert 303
Productivity battery 29, 30
Proportional reasoning 19, 24, 28, 161
Psychology and education 129
Psychology of learning and culture 283

Quantitative-relational abilities 19–43
  development 22, 26, 32, 39
  individual differences 27, 36, 40
  structure 21, 30
  task batteries 28, 32

Ratio concepts 161–175
Reading acquisition 277
  developmental models 67, 68
  word-search strategies 72, 74
Realistic learning environments 305
Real-life learning 321
Reasoning 217, 337–350

Reciprocal teaching 140
REFRACT 45, 48
  learning behaviour 53
Representation of knowledge 132
Rhetoric 339, 347

School learning 183
  overcoming encapsulation 243–259
Scientific research, cultural psychology 190
Secondary education, motivation and de-motivation 145–159
Second-order knowing 133
Segmental awareness 81
Self-assessment 1, 11
Self-care skills 208
Self-concept 3, 7
Self-confidence, motivation 148
Self-efficacy 4
Self-esteem 3
Self-regulated learning 133, 321
Shapy 233, 237
Simulation environment 305, 307
Situational knowledge 134, 291
Situational model 133
Social context of learning 134
Social interaction
  classroom groups 103
  university students 320, 321, 324, 333
Social marking, operational thinking 119–127
Sociocognitive conflict 119
Socioculture 223
Socioeconomic status, mathematical ability 27, 36
Sociohistorical psychology 207, 210, 276
Spacial knowledge 220
Specialized Structural Systems 20
  quantitative-relational 21, 26, 29, 38
Sport, after-school activities 195
Storytelling 221
Strategies
  choice and discovery 89–102
  reading/writing acquisition 67–87
Strategy instruction 319, 333
Structuralism 20
Structured learning environment 305
Structuring resources 230, 266
Subjective competence 1, 7

Talk, co-operative classroom groups 103–118
Teacher explanations 139
Technical education, motivation 151, 153
Textbase 133
Textbooks 135
Thinking strategies 332
Third World 189
Thought, Navajo culture 218
Tools 263
Tutor–group interaction 323, 327, 330, 333

University students
  knowledge of problem situations 292
  metacognitive instruction 319–336

Visual information 291
Volitional control 6

Wenger, E. 252
Word recognition 68
Word-search strategies, beginning readers 67, 72, 76
Working method, intellectual ability and novice learning 303–317
Written language acquisition strategies 67–87